

JOB COMPLETION REPORT

INVESTIGATIONS PROJECTS

State of Montana Name Northwest Montana Fishery Study
Project No. F7R7 Title The Relationships of Cutthroat
Job No. III Trout and Yellow Perch in Thompson
Lake

Period Covered: May 1, 1957 to March 30, 1958

Abstract: The shoreline of Lower Thompson Lake was treated in July with a fish-toxicant while the yellow perch fry were in schools. Some time after the application of the toxicant, cutthroat trout fry were planted in both lakes. Eighteen overnight gill net sets were made in each lake at four different sampling periods with about a three month interval between each sampling period. Information obtained from gill netting indicate that the shore-line introduction of fish toxicant was successful in eliminating the perch fry and also many of the adults. There was also a decrease in all species of fish as compared with the middle lake. Anglers were not observed on Lower Thompson Lake as was the case the previous year.

Objectives: The relationships of yellow perch and cutthroat trout have been studied in 1952 and 1953 in Middle Thompson and Lower Thompson Lakes in order to determine any weak link in the life cycle of the perch. The cost of complete removal of yellow perch in these lakes would be prohibitive at the present time. During the study it was found that perch fry could be effectively killed with "Fish-Tox" (a combination of rotenone and toxaphene) while in schools along the shore. The entire shore-line of Lower Thompson Lake was treated with "Fish-Tox" in 1954, 1955, 1956 and 1957, when the perch fry were congregated in large schools. Later in the summer, both Middle Thompson and Lower Thompson Lakes were planted with cutthroat trout fry at about 300 per surface acre. According to observations and gill net sets made since the partial poisoning took place, there are definitely less yellow perch in Lower Thompson than in Middle Thompson Lake. One of the objectives of this job is to determine the effects of partial poisoning and subsequent planting of fish in one lake as compared with planting and no poisoning in another lake. The over-all objective is to determine the most economical method to develop a fishery in a lake that has a stunted yellow perch population.

Techniques Used: An intensive schedule did not permit observations of yellow perch egg ribbons in either lake. However, observations were made periodically in Middle Thompson Lake for perch fry and they

were found in schools in both lakes along the shore-line on July 11. The shore-line of Lower Thompson Lake was sprayed with "Fish-Tox" from July 15 to 18th.

No schools of adult perch were observed during the past year in Lower Thompson Lake and therefore no need arose for treating any areas with rotenone for this fish.

Cutthroat trout fry were scatter-planted in both lakes on July 31, August 1 and 2.

Eighteen overnight gill net sets were made in each lake in May, August and December of 1957 and February of 1958.

Periodic creel census was taken by both fishery workers and law enforcement officers for the period covered by this report.

Findings:

A description of the area and studies made are reported in previous completion reports.

A more or less normal year was experienced during the spring run-off in that high water and flooding did not occur as happened in the previous year.

On July 31 and August 1st, 180,000 cutthroat trout fry were planted in Middle Thompson Lake and on August 2nd, 120,224 were planted in Lower Thompson Lake.

From May 6th to 10th, 18 overnight gill net sets were made in each lake (Table I & II).

TABLE I

The Number and Weights of the Various Fish Captured in Lower Thompson Lake During the Four Sampling Periods.

Species	May 1957		Aug. 1957		Dec. 1957		Feb. 1958		Total	
	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
Yellow Perch	755	99.14	202	40.26	2	.28			959	139.68
Cutthroat							1	.84	1	.84
Mountain Whitefish	5	2.83	8	6.65	6	2.69			19	12.17
Longnose Sucker	51	72.48	8	7.25	3	.41	2	.65	64	80.79
Large-Scale Sucker	34	61.62	23	16.33	4	.86			61	78.81
Squawfish	85	85.77	5	3.14					90	88.91
Sunfish	54	8.77	56	7.92					110	16.69
Bass			2	.54					2	.54
Kokanee					4	2.75			4	2.75
Eastern Brook	31	7.88	21	12.13	24	4.60	7	2.01	83	26.62
Totals	1015	338.49	325	94.22	43	11.59	10	3.50	1393	447.80

TABLE II

The Number and Weights of the Various Fish Captured in Middle Thompson Lake During the Four Sampline Periods

Species	: May 1957		: August 1957		: Dec. 1957		: Feb. 1958		: Totals	
	: No.	Wt.	: No.	Wt.	: No.	Wt.	: No.	Wt.	: No.	Wt.
Yellow Perch	: 2216	218.54	: 1617	240.28	: 358	53.11	: 332	45.53	: 4523	557.46
Cutthroat	: 4	3.88	:	:	: 14	13.38	:	:	: 18	17.26
Mountain Whitefish	: 36	21.06	: 132	63.30	: 142	69.83	: 9	4.76	: 319	158.95
Longnose Sucker	: 19	20.42	: 15	18.94	: 10	18.42	: 13	24.30	: 57	82.08
Large-scale Sucker	: 56	96.15	: 35	49.29	: 10	16.38	: 3	4.84	: 104	166.66
Squawfish	: 92	59.52	: 38	23.83	: 19	8.19	: 1	.22	: 150	91.76
Sunfish	: 181	20.82	: 65	9.38	: 3	.35	: 27	5.74	: 276	36.29
Bass	: 2	2.28	: 10	4.77	:	:	:	:	: 12	7.05
Kokanee	: 4	1.51	: 19	9.36	: 146	116.60	: 1	.22	: 170	127.69
Eastern Brook	: 3	2.34	:	:	: 2	.40	: 5	1.09	: 10	3.83
Totals	: 2613	446.52	: 1931	419.15	: 704	296.66	: 391	86.70	: 5639	1249.03

The nets were set in approximately the same areas as in previous settings. More yellow perch were caught in Middle Thompson Lake than in Lower Thompson Lake. It appears that the planted cutthroat trout are not surviving in either lake as only four were caught in Middle Thompson Lake. In general, less numbers of each species were caught in the lower lake than in the middle lake during the sampling period in May.

More yellow perch were caught in Middle Thompson Lake again during the sampling period from August 7 to 10. No cutthroat were caught in either lake at this time. Other species of fish were caught in larger numbers in the middle lake than in the lower lake.

Both lakes were sampled from December 2nd to 5th. Few fish were captured in Lower Thompson Lake. The lakes were again sampled from February 17th to 21st, when both lakes were covered with about four inches of ice. Due to the amount of work involved, the nets were set in one area of the lake and not scattered all around the lake as was done when no ice cover was present.

Again it appears that partial rehabilitation of the lower lake is reducing the numbers of all species of fish. The planting of cutthroat trout did not increase their numbers in either lake.

Little fishing was done by anglers on the lower lake. On the middle lake anglers caught kokanee and cutthroat trout during the summer months.

Recommendations: These data again demonstrate that yellow perch fry and adults can be destroyed by partial rehabilitation of a lake. It also demonstrates that the type of toxicant used may have a too lasting effect and kill other species of fish in the lake.

The build up of yellow perch in Lower Thompson Lake appears to be from movement of this fish from the middle lake. This has happened two years in a row now and since there is no practical way of installing an economical barrier, it is recommended that this particular project on these two lakes be discontinued. It is recommended that the use of fish toxicant be discontinued but the sampling of fish populations by gill netting be continued for two years more.

It is further recommended that another lake be found that has a yellow perch population but is isolated so that movement of fish from another body of water will not occur.

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